Infusing NBPTS Entries To Redesign a University Master's Degree Program:

Sharing Our Journey and Lessons Learned

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Historically, master's degree programs have been the predominant form of professional growth. However, traditional master's degrees have often failed to meet the needs of career teachers (Tom, 1999; Blackwell and Diez, 1998; Little, 1993). Traditional master's degrees have been criticized for their lack of (1) prestige and quality; (2) clear definition and purpose; and (3) coherent structure and organization (Conrad & Eagan, 1990; Conrad, Howarth & Millar, 1993). Sparks and Hirsh (2000) suggest

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that effective master's degree programs for practicing teachers incorporate the following tenets of successful professional development:

- Focused on helping teachers become deeply immersed in subject matter and teaching methods;
- · Sustained, rigorous, and cumulative coursework;
- Curriculum-centered and standards-based;
- Directly linked to what teachers do in their classrooms. (p. 45)

If universities are to contribute to the professionalization of teaching, then it is imperative that master's degrees more closely meet these tenets and the needs of practicing teachers (Tom, 1999; Blackwell & Diez, 1998; Shulman, 1993).

The National Board for Professional Teaching Standards (NBPTS, 1989) promotes a philosophy and vision for excellence in teaching that can become a framework for the redesign of advanced teacher development programs in universities. Blackwell and Diez (1998, 1999) have written extensively about the value of NBPTS for professional development and the need for master's degree programs to be redesigned for career teachers to improve each teacher's ability to teach all students effectively. The National Board portfolio entries, providing practical, systematic, and reflective components can become the foundation upon which effective university master's degree programs are built.

Targeting Teacher Needs in Master's Programs

In the past decade, the research literature has targeted a number of separate aspects of master's degree programs such as national teaching standards, cohorts, classroom research, portfolios, and reflection. For example, Blackwell & Diez (1998) and Tom (1999) state that incorporating the National Board Standards and developing a teaching portfolio of goals, knowledge and practice are critical features of a reformed system of professional development, including M.A. programs. Galluzzo (1999) adds that standards encourage creativity, enabling teachers to concentrate on what really matters most — student growth and development. Completing National Board activities allows teachers to see connections among the theories, research, and classroom practices they are learning about and their own work in classrooms and educational settings (Collins, Rickey & Bradley, 1998).

In a statewide survey of teachers in Iowa, Selke (1995) reported that all respondents chose the same two components as the most important features of a master's program: applicability to the classroom and a program design that emphasized the needs of career teachers. The third-ranked component desired by surveyed teachers was a program that incorporated the National Board Professional Teaching Standards (NBPTS).

As universities begin to examine and redesign their traditional master's degree programs, a few institutions are incorporating new features in their program design: cohorts (Burnaford & Hobson, 1995; Sockett, 1995), and constructivist approaches to designing curriculum (Rainer & Guyton, 1995), as well as culminating portfolio or action research projects (Collins, 1998). Still, there are no comprehensive models from which to learn what works best — research is rare that documents a comprehensive approach to redesigning an entire program (Blackwell & Diez, 1998). In response, we offer an indepth description of two redesigned and revitalized subject specialist master's programs at California State University, Northridge.

The Redesigned Master's Programs

Even though a variety of master's degree options were listed in the university catalog for many years, there was minimal interest in master degree programs within the Department of Secondary Education at California State University, Northridge, as evidenced by consistently low enrollments. Yet, Department faculty heard concerns from area teachers about the need for a master's program designed specifically for on-the-job teachers. Our program redesign initially grew from ongoing collaboration with the surrounding secondary schools in the university teacher preparation programs. Teachers shared their desire to broaden their theoretical knowledge in subject fields, which would in turn help them to apply newfound research to their classrooms, and incorporate theory into real-world practice. They wanted a program designed to help improve their practice and develop tools for better assessing their own effectiveness in the classroom. And most importantly, they did not want their master's program to be a collection of isolated courses, but an ongoing professional development program that combined content and pedagogy and challenged them to strengthen and promote deeper inquiry into their practice.

Purposes of the Mathematics and English Subject Specialist Master's Programs

Although the content emphasis differs for mathematics and English educators, and the programs began a year apart through somewhat different routes, their purposes are nearly identical. These purposes are

in keeping with the National Board's five core propositions and their standards related to subject areas and age levels. Each master's program endeavors to:

- Update and expand the theoretical and pedagogical knowledge bases in order to enhance classroom instruction.
- Reflect on teaching practices after reading the research and discussing experiences with colleagues, which will lead to new awareness and expansion of knowledge in the classroom.
- Explore on-line capabilities, becoming acquainted with current software applications and becoming proficient in using technology in teaching.
- Research a topic for the duration of the two-year master's program and write an article that represents an important component of the culminating portfolio.
- Reinforce collegial conversations and networking through a coterie of knowledgeable peers.
- Participate in professional leadership through making curricular improvements within one's classroom, initiating school reform at the school level, and making conference presentations.
- Broaden the College of Education pool of excellent teachers for supervised instruction of student teachers and mentoring during beginning teachers' induction years.
- Initiate system reform by creating better outcomes for the classroom teacher which, in turn, develops a better prepared incoming student at the university level.

The Format of the "New" Subject Specialist Master's Degree

Special features of the newly developed master's program included grouping middle school and high school mathematics and English teachers into master's cohorts and developing a spiraled continuum of content curriculum which infused the NBPTS activities as assignments into existing courses. Since one purpose of our master's degree was to develop teacher leaders, it was critical to involve candidates in the knowledge of the National Board Teaching Standards and portfolio activities, mathematics or English curricular reforms, innovative teaching methods, and reflection through all aspects of the program, including classroom research.

Both the Mathematics and English Subject Specialist Master's consist of 30 units of study, in keeping with university practice. Two 3-unit late afternoon and evening courses meet one day per week for 4

semesters. This schedule results in the completion of 24 units of the twoyear program. The remaining six units are credential or other graduate courses taken prior to entering our master's program, or electives completed during summer sessions.

Sequence of Coursework and Alignment with NBPTS for the Mathematics Master's Program

Now in its fourth cohort, the program has an established sequence of coursework and key assignments. The first two courses of the math master's program are Teaching Contemporary Mathematics and Application and Utility Software in the Secondary School Curriculum. The program begins with course topics of great interest to mathematics teachers: extensive "hands-on" experiences with technology that included computers, calculators, manipulatives, and innovative software. The fundamental question, "What is mathematics?" is examined along with differing methods of teaching based on learning theory from educational psychology. In addition, we debate the pros and cons of using standards. Although mathematics teachers might feel these issues seem like starting over, it is not a "hard sell" to have them carefully think about these pertinent issues since "teaching to the standards" has become the state's current mantra. By realizing that mathematics educators do not agree on the nature of mathematics or the nature of the learner, the mathematics cohorts come to understand and appreciate the differing beginning points of the sometimes conflicting national, state, and local standards. The indepth study of standards is a valuable exercise for setting a strong foundation in current mathematics teaching. The NBPTS whole class video entry fits naturally into this course, and has proven to be a highly successful final project for the class.

In Application and Utility Software in the Secondary School Curriculum, the second course of the first semester, teachers explore mathematics research studies on numerous topics of interest. Their exposure to, and knowledge of current mathematics research provides the crucial groundwork for their choosing an individual research topic to explore next semester. The math cohort also explores the varied uses of computers in the classroom, learns how to access lesson plans and graphics from the internet, and creates PowerPoint presentations and web pages. Teachers in the mathematics cohort improve their mastery of technology by becoming proficient with the TI-82/83, Geometer's Sketchpad, Casio Color Graphing Calculator, Probeware, and TI-92. During the second course, teachers begin to compile the NBPTS Documented Accomplishments entry, which continues throughout the rest of the master's program.

The second semester of the mathematics program emphasizes research. In the *Research in Education* course, the teachers begin to design a classroom analysis project producing a review of the literature, statement of the problem, and plans for investigation. The master's candidates develop initial qualitative or quantitative action research models to implement, analyze, and complete during the next year. The main ideas of the *Theory and Research in Teaching Secondary School Mathematics* class center on the research and practice of alternative assessments as well as the analysis and practice of using innovative curriculum. Additional types of technology are incorporated in designing math lessons. The teachers complete the NBPTS Developing and Assessing Mathematical Thinking and Reasoning entry during the second semester.

During the *Seminar in Secondary Education* in the third semester, teachers examine topics of special and current interest in mathematics education such as international comparison studies. This is done in groups with presentations given to the class. Although cooperative learning has been used in many mathematics classrooms for a number of years, "best practice" using this mode of instruction is reexamined. Discussions on this topic assist in the completion of an exemplary NBPTS Small Group Video entry. By the third semester teachers conclude the gathering and analysis of data in their classroom research project, and advance to some initial conclusions. During the last semester of the master's program, teachers complete the documentation of their classroom research, the NBPTS Documented Accomplishments entry, and assemble their culminating master's portfolio for examination.

Sequence of Coursework and Alignment with NBPTS for the English Master's Program

The coursework sequence for the English cohorts is similar in structure to the mathematics program. The first course in the English program is *Theory and Research in the Teaching of English*. Most of the students have not heard of researchers or theorists such as Applebee or Rosenblatt when they begin. Some find the reading to be difficult since it is rather abstract and they need to work at making tangible teaching connections. However, choosing theory and research to begin the program is the right choice because it provides a broad and necessary foundational background for succeeding classes. Candidates connect their new knowledge with classroom practice when completing the NBPTS portfolio activity, Instructional Analysis: Whole Class Discussions. In the *Research in Education* course, candidates create a proposal for their classroom research project that will be completed over the remainder of the program.

The second class of the first semester, *Microcomputers in the Second-ary Reading and Language Arts Curriculum,* increases the students' online proficiency, familiarizes them with digital library and research possibilities, and encourages their utilization of computer technology as a tool in their classrooms. Candidates also access the National Board website for the most current information. Technology is the area with the widest variation in background knowledge when the English cohort teachers enter the program. In the first cohort, one student had never used a mouse, and about one-third were unfamiliar with email. Perhaps in the future, these computer experiences will be offered at least partially online.

Second semester courses include *The Program in Literature Grades 6-12 Issues and Research in Education*. The first of these classes affords an opportunity for candidates to evaluate literature curriculums and standards, study works of adolescent and multicultural literature, and explore English and reading pedagogical approaches. Students complete the National Board portfolio entries addressing videotaped small group lessons and student growth in responding to literature.

Special Topics in Language Arts and Composition is completed in the first semester of the program's second year, along with Seminar in Secondary Education. The Special Topics course focuses on the teaching of language and composition and involves a series of guest lecturers/ professors from the English Department coordinated by a teacherscholar in residence. This class begins with a series of questions raised by the teachers themselves, and the sequence of topics is arranged according to the problems posed. Some examples of basic questions are, "We're told not to teach grammar in isolation, but when half the class is writing in fragments, how do you avoid it?" and "How can one maintain high standards yet continually fail the compositions of English Language learners?" These candidates complete the National Board analysis of student learning, focusing on their writing. The seminar course focuses on the multiple roles of the secondary English teacher, broadening the scope of awareness and knowledge from the classroom to the school and community arenas. It makes sense to address the NBPTS entry Documented Accomplishments, focusing on the family and community in this course. Candidates also collect data for their ongoing research projects in conjunction with the seminar.

In the final semester of the program, candidates are enrolled in *Current Issues in Education*, a class taught with a focus on national reforms and issues. Additional topics are leadership skills and professionalism. The master's candidates complete the other aspect of the National Board portfolio entry, Documented Accomplishments, focusing on learning and collaborating with other professionals. Finally, candi-

dates also enroll in the culminating course that requires them to analyze their research data, write an article describing their study and findings, and complete the program final portfolio.

The Culminating Experience:

Portfolios and Candidate-Led Conferences

When considering possible program culminating experiences, both the Mathematics and English M.A. programs opted not to select either of the two traditional university formats, a comprehensive examination or thesis/project. Instead, a graduate portfolio, with a candidate-led conference, was chosen as a far better match with the programs' goals. The portfolio presentation, while technically a form of the comprehensive examination, encourages candidates to demonstrate, articulate, and reflect on their learning over the course of the two-year program; to make connections between program readings and activities and their own classrooms; to promote the role of teacher as researcher; and to model an assessment candidates might employ with their own students. Further, these portfolio presentations showcase the M.A. programs across the university and with university faculty and administrators by involving them in the culminating master's event.

The portfolios allow candidates to select and reflect on work completed during the two-year program. All candidates include the research piece developed over three semesters and completed in the final program semester. English candidates select an artifact from each semester, along with a "wildcard" choice, while mathematics candidates include five to seven artifacts from coursework over the entire program. Each portfolio selection is introduced by a one-page explanation and justification for its inclusion that draws on National Board standards. An introductory letter from the candidate and a concluding two-page reflective essay focus on the impact of the program. Finally, each candidate selects a portfolio title. These titles are sometimes clever ("Onward and Upward: Master's Experience Provides Compass in Quest for Teaching Success" or "My Road to a Master's Degree '... That Has Made All the Difference'") or humorous ("What a Long Strange Trip It's Been").

The portfolio presentation, a highlight of the program, is scheduled about a month prior to graduation. University faculty and administrators, former M.A. graduates still teaching in the area, and school administrators who agree to participate are paired with an individual candidate. Each guest reader examines his or her candidate's portfolio for 30 minutes and then confers with that candidate for another half-hour period, with candidates leading the discussion. Readers are also asked to complete a one-page evaluation of the portfolio and the confer-

ence to be submitted to the course instructor within one week. It has been gratifying that colleagues are eager to read and discuss the portfolios, and express very positive comments about the experience.

In addition to being the culminating master's experience, portfolios are also valuable in our ongoing evaluation of course readings, class activities, faculty teaching effectiveness, and program design. Candidate comments, for example, validate the inclusion of National Board portfolio entries as class projects that are meaningful and helpful in connecting the program with their practice.

Outcomes of Mathematics and English Subject Specialists M.A. Programs: "Doors Have Opened"

The outcomes described in this section are based on a content analysis of candidate portfolio reflections, responses to a candidate survey, and a focus group reunion meeting of master's candidates who had completed the program and graduated. One graduate's comment captures the overall sense of collective accomplishment: "Doors have opened . . . I simply have the confidence to take on the challenges." Program outcomes are discussed in terms of NBPTS portfolio activities, increased knowledge base in curriculum and pedagogy, technology, research, leadership roles, and university-based results.

NBPTS Portfolio Activities

National Board portfolio entries play an essential role in the redesigned M.A. program, and are cited by 100% of the cohort members as among the most valuable aspects of the program. It is the videotaping, assessment of student work, application, and reflecting on professional activities or outreach to families that allows clear connections to classroom teaching and student work. For example, one mathematics graduate explained, "At first, taking video of myself teaching seemed uncomfortable. What resulted was that I began to see my strengths and weaknesses and I began to want to see myself grow." Another graduate noted,

The [National Board] assessment of literature and writing activities of individual students was most helpful. I really enjoyed taking the time to focus on and reflect on individual students so thoroughly. It was eye-opening! That focus is beneficial for future work and projects as well, for planning, and most importantly, for understanding my students' capabilities and their personal styles and views.

Numbers of M.A. graduates have become National Board certified during or following the programs, and other graduates have "sent for their boxes" and enrolled in the College of Education's support programs for the current year. On the other hand, several comment that the M.A. degree substituted for the National Board process, explaining their wish to focus on classroom teaching.

There is currently a clear distinction between the M.A. course activities and attempting National Board certification. We have integrated portfolio activities meaningfully in the sequence of classes in our present programs, but these completed entries will not be submitted for National Board certification. In our experience, the Board exercises are worthy activities in and of themselves, and they certainly have been successful in promoting reflection regarding student work and in connecting course readings and classroom practice. As the Board continues to revise standards and the portfolio activities, we will continue to adapt our course projects to retain this valuable connection.

Increased Curriculum and Pedagogy Knowledge in Mathematics and English

Cohort teachers in mathematics report increased content knowledge and teaching success, and they commonly articulate how this knowledge has resulted in increased professional confidence and empowerment. Mathematics cohort teachers report an increased use of cooperative work and small group discovery lessons, resulting in more interactive classroom instruction using manipulatives and hands-on activities focusing on higher order thinking skills.

In addition, mathematics cohort graduates often comment in their surveys on their own increased writing and the resulting integration of writing in the mathematics classes they teach. These mathematics teachers also explain that their assessment practices for both writing and mathematics assignments had grown to include the use of rubrics.

The English cohort also report strong increases in their content and pedagogical knowledge. Many note how valuable it was to expand the traditional canon to include more young adult literature, contemporary literature, and multicultural literature. "Where were these books all the years I was teaching [before]? Why aren't they in the schools now?" questioned one graduate in the survey. His questions led to discussion during the focus group meeting about the importance of continuing opportunities for meaningful professional development and the value of the cohort group in supporting this type of learning. In literature instruction, many of these teachers are now using literature circles or modifications of literature circles. They attribute their adoption of this

method of group reading and talking to their course texts, the research conducted by some in the cohort, and the literature circles modeled in their M.A. classes. Several graduates also report using reading rubrics in ways they had previously used writing rubrics; others comment on their expanded use of literature portfolios with students.

Related to composition, many note their changed approaches to writing in the classroom, at least in part because of their extensive writing for the program. Commented one graduate, "I just didn't realize that my students needed more time to get through the writing process than I used to allow. My students write more cohesive papers now that I give them more sufficient time and support." Several completed research projects on their students' writing, including an examination of structured writing approaches and, writing portfolios were a form of assessment graduates continued to implement and modify. "I've always used portfolios, but I've gotten more involved recently in student self-assessment and parent involvement with the portfolios."

Value of Technology

I still can't believe that I was not familiar with the Internet or e-mail until the program! I can't imagine my classroom without technology. We are a digital school now and we do everything on the computer from attendance to grades. The [computer] class, and especially the time in class to explore, gave me confidence to try new software and applications.

Over and over again, the responses to the technology courses in both the English and mathematics cohorts focused on the value of seeing technology for what it is, a tool, and the importance of time for teachers to explore technology and become comfortable with its use themselves in order to integrate technology into their classes. One candidate summarized, "I became comfortable using these tools with my classes because I had used the tools myself."

Research Knowledge in Mathematics and English

Cohort members in both subject areas commented on the value of course readings in background theory, and could articulate how theory was related to their teaching. English graduates, for example, noted how reading about reader response theory and the place of independent reading informed their planning and teaching. Commented one, "I love it when I'm at a conference and I hear someone mention Krashen, or Rosenblatt, or Applebee. I know those names! I know what they're about! And as a result, there's more of a student-centered process in my classes." A math cohort graduate stated, "I have gained from my graduate studies

a good grasp of what is involved in research studies and how to interpret and analyze them" and another added, "I plan to continue to read the educational literature to improve my teaching practice for the benefit of my students."

Cohort members were engaged in their own research projects over three of the four semesters of the program. They framed a question, conducted a literature review, and planned their studies in the second semester of the program; collected data during the third semester; and analyzed data and wrote up their studies and results in the final semester. Without a doubt, completing this research project was daunting, stressful, and for many the most challenging aspect of the program. Yet graduates reported being extremely proud of their completed research studies, and they recalled fondly, too, the special bonds that evolved with the classes involved in their studies.

However, while a semester's class was devoted to exploring the many and varied roles of teachers, the "teacher as researcher" did not appear to be a role that remained with a majority of students after the program's completion. It is likely that conducting research is simply overwhelming with teaching schedules and without a program structure and cohort support. Perhaps an avenue of professional development for the future is to create forums for graduates to conduct and publish classroom-based research. Although most master's graduates have not conducted classroom research following the completion of their M.A. programs, a few from each cohort found the research component so compelling that they are planning to pursue doctoral degrees so that they might continue their professional development at a new level.

Leadership Roles and Professional Confidence

A survey and interview of the mathematics and English graduates at a reunion meeting found two common threads running through the discussions — professional confidence and the assumption of new roles since completion of the program. A majority of the M.A. graduates in the mathematics and English programs have accepted new leadership roles or continued previous roles with fresh competence and enthusiasm.

As these teachers fill numerous leadership roles in their schools (e.g., technology coordinator, department chair, district-level curriculum development), it is notable that *all* have remained in the classroom since completion of the program. The graduates' pride in assuming leadership roles permeated survey and focus group comments, as in this example: "I applied to be a BTSA Support Provider and am doing that this year. Before, I wouldn't have considered myself. I was always the one thinking I needed help. Now I'm the one who can give help. I'm on the other side."

If key goals of the M.A. programs are to build leadership and promote reforms, then these programs have undoubtedly achieved success in that regard.

University Outcomes:

M.A. Program Enrollment and Faculty Development

A programmatic outcome of the M.A. cohorts is the increase in the number of M.A. candidates in our Secondary Education options. Before we began the cohort programs, the Department awarded about eighteen M.A. degrees annually, and the majority of these were in Curriculum and Instruction or Instructional Technology. Prior to the graduation of the 1999 English education cohort of 23, only two M.A. degrees in English Education had been granted during the previous five years. In the years since beginning the programs in mathematics and English education, the number of students graduating with M.A. degrees in Secondary Education annually has doubled. The numbers testify not only to the success of the subject-focused programs, but they provide an indication that professional development that incorporates NBPTS activities into an advanced M.A. degree is viewed as valuable. We believe our enrollment increase indicates a widespread need for meaningful professional development for secondary teachers.

The new M.A. programs have also stimulated our university faculty to read more widely in the professional literature, consider new course curriculum and activities, and implement new assessments.

Insights for the M.A. as Professional Development

Our experiences with M.A. cohorts in mathematics and English lead us to a number of insights regarding the reasons for the programs' success. The first relates to the focus on the subject area. For these students, the opportunity for subject-based courses is the attraction and greatest asset of the program. Both master's programs began in subject-focused curriculum before moving to more broad-based educational issues, while the research project and portfolios as later parts of the program remained subject-centered.

Closely related is the program's carefully planned curricular balance between "practice" and "theory" within the subject area. For our students, this balance was essential, and discussion, class activities, and student work necessarily worked to bridge the two. In those cases where an instructor focused too heavily or too soon on theory, students were critical and annoyed that the balance had tipped too far toward the impractical. Similarly, these experienced teachers were always glad to

share teaching ideas, but readings about "the bigger picture" and the "theory behind practice" were well received because they greatly enhanced their ability to reflect on their own teaching and appreciate a wider variety of teaching ideas.

A third point concerns the tremendous appeal and power of the cohort. These students met weekly during the academic year for two years, completed numerous projects together, shared videotapes and papers, provided feedback on others' work, and stuck together through crashed hard drives, new babies, chicken pox, and family tragedies; subgroups formed and changed over the years. The cohort was essential because of the support it provided for individuals. In fact, with graduation came the loss of the cohort, and the unanticipated loss of continued movement forward:

I was always stressed during the program, but now that it's over I miss the weekly professional dialogue and sharing of ideas with colleagues who are at the "same level" as me. Sometimes I get very frustrated with the teachers I'm surrounded by at school who don't seem to have a clue about the possibilities of teaching, nor the passion. The M.A. program I believe has taken me to a level of professionalism that I am proud of.

This graduate's comment has important implications. With the end of a master's program, the need for professional development does not cease. Our cohort groups have expressed interest in continuing their professional development, and they seek and even expect our involvement. One- or two-times a year meetings with a topic for discussion, doctoral programs, NBPTS Board certification support classes, conference attendance or presentations, and subject projects (e.g., National Writing Project) are all avenues mentioned by some graduates as possible ways to continue their need for professional growth.

The university-based master's degree subject specialist programs described here are a model of redesigning professional development. The process of professional growth deserves more critical attention since it is, in fact, a central foundation upon which to build education reform. As colleges of education develop and share their redesigned master's degrees for practicing teachers, the knowledge base will be expanded, the profession strengthened, educators empowered, and student achievement increased. Master's degree programs *can be* a catalyst for the revitalization of education.

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